

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 03/05/2010 has been entered.

Response to Arguments

Applicant's arguments filed 03/05/2010 have been fully considered but some of them are not persuasive.

On pages 15-16, Applicant argues that the computer readable medium recited in claims 20 and 31 is statutory subject matter under 35 U.S.C. 101.

In response, Examiner respectfully disagrees. Although in various paragraphs, the specification describes the medium as tangible recording medium as examples, the specification does not clearly state that the medium is only limited to these types of media. As such, given broadest reasonable interpretation, the recited medium comprises a signal or carrier waves. Such a medium is non-statutory subject matter.

On pages 17-18, Applicant argues that Ueki does not disclose the feature of "an allowable range of the inter-layer jump being no more than 40,000 sectors."

In response, Examiner respectfully disagrees. In Fig. 11 and described in at least [0129], Ueki clearly teaches jumps between layers L0 and L1. Further, at least in [0114],

Ueki further teaches that a jump is associated with a movement of the optical pickup which is equal to at least 0.2 seconds for the case one area is located in one layer and the other area to be jumped to is on another layer. The seek time associated with that jump is at least equal to seek time related to intra-layer seek time plus inter-layer seek time. The inter-layer seek time is about 0.2 second.

As such, to maintain a bitrate required for a reproduction, depending on picture quality as disclosed in [0094], [0099]-[0100], and [0102], of 2 Mbps as an example, the allowable jump range is 0.4 Mbps, which is around 400,000 Kb or around, 5000 Kbytes, which is less than 40,000 sectors, wherein each sector is 2KB as described by Okada in Fig. 1 and column 20, lines 55-56. In other words, if the range is greater than that amount, the time required is more than 0.2 seconds and the buffer would be exhausted before new data can be buffered for continuous reproduction. As such, Applicant's arguments with respect to the teachings of Ueki regarding the feature of "an allowable range of the inter-layer jump being no more than 40,000 sectors" are not persuasive.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

Claims that recite nothing but the physical characteristics of a form of energy, such as a frequency, voltage, or the strength of a magnetic field, define energy or magnetism, per se, and as such are nonstatutory natural phenomena. O'Reilly, 56 U.S. (15 How.) at 112-14. Moreover, it does not appear that a claim reciting a signal encoded with functional descriptive material falls within any of the categories of patentable subject matter set forth in Sec. 101.

... a signal does not fall within one of the four statutory classes of Sec. 101.

.... signal claims are ineligible for patent protection because they do not fall within any of the four statutory classes of Sec. 101.

Claims 20 and 31 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows.

Claims 20 and 31 recite a "computer-readable medium," which as evidenced from the disclosure of the specification, comprises a communication medium (see at least paragraphs [0043] and [0267]), which is understood by one of ordinary skill in the art as signal, carrier wave, etc ..., with descriptive material. While "functional descriptive material" may be claimed as a statutory product (i.e., a "manufacture") when embodied on a tangible computer readable medium, a signal or carrier wave, etc ... embodying that same functional descriptive material is neither a process nor a product (i.e., a tangible "thing") and therefore does not fall within one of the four statutory classes of Sec. 101. Rather, "signal" or "carrier wave" is a form of energy, in the absence of any physical structure or tangible material.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al. (US Patent 6,122,436 – hereinafter Okada) and Ueki (US 2004/0105351).

Regarding claim 15, Okada discloses an information recording medium, comprising: a configuration storing therein data larger than or equal to an allowable minimum consecutive data size determined on the basis of a required jump time of an intra-layer jump and an inter-layer jump executed in a playback processing of the information recording medium (*Fig. 2a; Fig. 2b; column 20, line 66 – column 21, line 42 - allowable jump range corresponds to the range that yields the seeking time less than or equal to the time it takes to process all data in the buffer*).

However, Okada does not disclose the allowable range of the inter-layer jump being no more than 40,000 sectors ([0094]; [0099]-[0100]; [0102]; *Fig. 9 – wherein Ueki discloses, depending on picture quality, required data rates comprise 2 Mbps, 4 Mbps, or 8 Mbps – for a 2 Mbps allows largest allowable jump range – with 0.2 seconds of allowable inter-layer seek time, the jump range for 2 Mbps data rate requires 0.4 Mb, which is less than 0.2 MB, which is less than 205KB, which is less than 103 sectors*).

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the teachings of Ueki into the method disclosed by Okada in order to be able to use multi-layer recording media for the reasons of compactness and large capacity and also to guarantee continuous reproduction of data on multi-layer recording media.

Regarding claim 16, see the teachings of Okada and Ueki as discussed in claim 15 above. However, Okada and Ueki do not explicitly disclose said required jump time calculation step is a step of calculating: as to an intra-layer jump, a sum of a seek time of a pickup and an overhead time involved in a processing for a read data unit block of the information recording medium, and as to an inter-layer jump, a sum of the seek time of the pickup, a pickup adjustment time involved in an inter-layer seek, and an overhead time involved in a processing for a read data unit block of said information recording medium.

Official Notice is taken that steps of calculating, as to an identical intra-layer jump, a sum of a seek time of a pickup and an overhead time involved in a processing for a read data unit block of an information recording medium, and of calculating, as to an inter-layer jump, a sum of the seek time of the pickup, a pickup adjustment time involved in an inter-layer seek in case of a dual-layer recording medium, and an overhead time involved in a processing for a read data unit block of the information recording medium are well known in the art.

One of ordinary skill in the art would have recognized that the seeking time disclosed by Okada and Ueki should be modified to include all kinds of overhead time that involve in the jump to guarantee that the buffer in Okada et al. would not underflow and the reproduction of the data stream in Okada et al. and Ueki would not be interrupted.

Regarding claim 17, Okada also discloses said consecutive data allocation size determining step is a step including an allowable minimum playback time determining

step of determining an allowable minimum playback time as a playback time corresponding to the allowable minimum consecutive data size of the data to be stored in the information recording medium, and determining the allowable minimum consecutive data size of the data to be stored in the information recording medium on the basis of said allowable minimum playback time (*Fig. 2a; Fig. 2b; column 20, line 66 – column 21, line 42*).

Regarding claim 18, Okada also discloses said information recording medium further has a data allocation of setting a distance between jump origin data and jump destination data in a jump processing that can be generated in the playback processing of the stored data in the information recording medium and setting a distance between the jump origin data and the jump destination data within the allowable jump range determined in said allowable jump range (*Fig. 2a; Fig. 2b; column 20, line 66 – column 21, line 42*).

Regarding claim 19, Okada also discloses said information recording medium further has data allocation in which the distance between the jump origin data and the jump destination data within said allowable jump range by an interleave processing of clip data set as a data unit of storage target data on the information recording medium (*Fig. 2a; Fig. 2b; column 20, line 66 – column 21, line 42 – audio data and still picture data are interleaved*).

Allowable Subject Matter

Claims 1-14 and 21-30 are allowed.

Claim 1 recites, "the allowable range of the intra-layer lump being 1/10-stroke, a full stroke being equivalent to a range from an innermost side to an outermost side of the recording medium, and the 40,000 sectors being greater than the 1/10-stroke," which is unique feature not disclosed by prior art.

Claims 2-7 are allowed because they depend either directly or indirectly on claim 1 above.

Claim 8 is allowed for the same reason as discussed in claim 1.

Claims 9-14 are allowed because they depend either directly or indirectly in claim 8.

Claim 21 is allowed for the same reason as discussed in claim 1 above.

Claims 22-25 are allowed because they depend either directly or indirectly on claim 21.

Claim 26 is allowed for the same reason as discussed in claim 1.

Claims 27-30 are allowed because they depend on claim 26.

Claims 20 and 31 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 101, set forth in this Office action.

Claims 20 and 31 recite a feature similar to the allowable feature recited by claim 1 thus would be allowable for the same reason.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Q. Dang whose telephone number is (571)270-1116. The examiner can normally be reached on IFT.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, THAI Q. TRAN can be reached on 571-272-7382. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hung Q Dang/
Examiner, Art Unit 2621